

## APPENDIX

SEQ ID N°	SEQUENCE INFORMATION
SEQ ID N° 1	<i>D.melanogaster</i> SD07655 cDNA (= DmMRP4b8d)
SEQ ID N° 2	Ag MRP1a
SEQ ID N° 3	Ag MRP1b
SEQ ID N° 4	Ag MRP1c
SEQ ID N° 5	Ag MRP1d
SEQ ID N° 6	human MRP
SEQ ID N° 7	exon 4'a DmMRP
SEQ ID N° 8	exon 4 b DmMRP
SEQ ID N° 9	exon 8 a DmMRP
SEQ ID N° 10	exon 8 b DmMRP
SEQ ID N° 11	exon 8 c DmMRP
SEQ ID N° 12	exon 8 d DmMRP
SEQ ID N° 13	exon 8 e DmMRP
SEQ ID N° 14	exon 8 f DmMRP
SEQ ID N° 15	exon 8 g DmMRP
SEQ ID N° 16	DmMRP 4a8a
SEQ ID N° 17	DmMRP 4a8b
SEQ ID N° 18	DmMRP 4a8c
SEQ ID N° 19	DmMRP 4a8d
SEQ ID N° 20	DmMRP 4a8e
SEQ ID N° 21	DmMRP 4a8f
SEQ ID N° 22	DmMRP 4a8g
SEQ ID N° 23	DmMRP 4b8a
SEQ ID N° 24	DmMRP 4b8b
SEQ ID N° 25	DmMRP 4b8c
SEQ ID N° 26	DmMRP 4b8e
SEQ ID N° 27	DmMRP 4b8f
SEQ ID N° 28	DmMRP 4b8g
SEQ ID N° 29	Primer Dr2for (table 2)
SEQ ID N° 30	Primer Dr6rev (table 2)
SEQ ID N° 31	Primer Dr4arev (table 2)
SEQ ID N° 32	Primer Dr4brev (table 2)
SEQ ID N° 33	Primer DR17 (table 2)
SEQ ID N° 34	Primer DR18 (table 2)
SEQ ID N° 35	Primer rev 8 (table 2)
SEQ ID N° 36	Primer 8a (table 2)
SEQ ID N° 37	Primer 8b (table 2)
SEQ ID N° 38	Primer 8c (table 2)
SEQ ID N° 39	Primer 8d (table 2)
SEQ ID N° 40	Primer 8e (table 2)
SEQ ID N° 41	Primer 8f (table 2)
SEQ ID N° 42	Primer 8g (table 2)
SEQ ID N° 43	Primer gMPR1 for (table 4)
SEQ ID N° 44	Primer gMPR1 rev (table 4)
SEQ ID N° 45	Primer MRP104 (table 4)
SEQ ID N° 46	Primer MRP105 (table 4)
SEQ ID N° 47	Primer gMPR2 for (table 4)
SEQ ID N° 48	Primer gMPR3 for (table 4)
SEQ ID N° 49	Primer gMPR4 for (table 4)
SEQ ID N° 50	Primer gMPR234 rev (table 4)

>CDS undefined product 8660:30368 forward MW:172278  
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SEQ ID NO2 (gMRP1a)

>CDS undefined product 10719400:10724150 forward MW:158423  
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DVAFDRTEWYDFMHLMLAFAWLACGIRSYSGGGHDSSTGSNTPKPNFIRGLFFSWMDS  
TYREAHGSVAFYQGTLFQGTLPEDRRCEQLLELYEKANARRGYTAVDDGSGRMESELCR  
FTIGKLLSPFRGEIILAGLNRFVLISLFLCPYLLRLLEENQPRMYQKWIYTALFDAST  
IIAIALNTHYQHTTQDIGLIRISILMGAIYRSILHDGITSNASSDTLTSDTALFVPFIQNL  
HMMWSAPIIILITFVALWVGVLGPIGTGLAIIVAVIAITRKLAKKIAAQEKHITAHNSND  
RVRLLTASIEQMQQIKSDLMEPFFEQRIGEHRRRAELSHMCTIILYDALKYLLSIATPMIV  
ACGTFLFMYVVGSGALLTVQSMFVAIALFGLTRYPLSELPNLMANWGTINVKLQVINEVV  
CSGKQRKSSGKMPQNGSSTGGAGRGSFEKMQEVEVHTFDQLEDSIADTSRAEVRLIERAK  
FSTEKNTILRGINLTREGTFIGVSGTHSGKTSLLRAMIGRLQRTGGTSTIAWNRVAYC  
PQTPWIHSGTIRSNILFGQYEKSRYEEVLRACCLEEDLKTFPDYDERVSEGGHSLSGG  
QARRVSLARAVYRHADVYLLDDPLRSLDPNVARKVFEGVFRQHGLLAGCTCVFISHDPE  
HLSIADKVLVMMAGGTIEKVLKPAEVSEVLLGQLNGAEDEPQEEKAPKADQQNKKRARKA  
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VNRFNSNDLKVVVDKTIITSVRSVLSASFVSLGTLMLFVYKLHSKLLLFLVLAFTAALMLVCG  
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QNYIYHNRFANRWIGIRLEFIGAIVIYYYALLTVSNQSMVGFAFGVIIIVSYVRLIPLSN  
SLLLALGALEENIISFERVAQYLDLQRETNDDTGVDYPTSGMDKHPVLGPIIYRDFSLTH  
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LQKLRGEELTLPQSTSFLSGVVQNFIDPRNGHTDEELIRCLRECGLGNVHLATPLENLSV  
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SEQ ID NO3 (gMRP1b)

>CDS undefined product 10726657:10732049 forward MW:168450  
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GIRSTGTMFIFWFLKAFFGIIQMRTEAMLHDVRGSGTGDFAEFQFVSYTIQYTFVCCVLL  
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DTSRALVPPFDKYWYESVEKGRRKQIAADKKAGKTNLVYKPNAATNGSVLPAMVKAYGGP  
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SAPLIIALCIYLLYELLGPAVFAGLGMVIMIPITGFIATRMRDLQVEQMKIKDERVKKM  
NEILGGIKVLKLYAWEPSFQDTVVTVRNEELDVLKSAAYYAGTYFVWTMAPFLVTLASF  
AVYVMIDEENVLDPQTAFVALALFNILRFPLAMFPMMITFAMQAWVSIKRIDKFMNSEEL  
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NIWLTDWSEDPEAATDPSVRDMYLGVYGLGGAQSIALLIASVTLALGCIKAARELHN  
LESSMRMPSFFDTPLGRIMNRFSKDVVDNILPQSIRAWLLMFFNVIGVFVVGIST  
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FKDYQIRYREGLDLVLIRGISLNVRGGEKIGIVGRTGAGKSSLTGLFRIVEAAGGQIID  
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SEQ ID NO4 (gMRP1c)

>CDS undefined product 10733163:10738098 forward MW:168434  
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FMRKYGVRTSGTMFMFWFLRMFFGI IQLRTEVMENDKRPNAAIGSGDTVDFWEYQYVSYIL  
QYSLICLMLVLELFPDKEPSFSYYPKAAKPNPELRSSFFSKLLFLHFDAFAWGFRNPLT  
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YTMIRAYGGPFWFAGMLQLAISGLQFASPYLMQELMAVIAFDGPLWKGFLTFGLFGASL  
LLGLFNGQYLFYTFLSGFRIRTGLISAIYRKALRISSAAKKDTTGEIVNLMAVDAQKFF  
ELTSYLHILWSALLIIGLCVFLYDILGPAVFAGLCVAMILMTPVSGVAAKLKTHQVAQM  
KLKDERVKKMNEILGGIKVLKLYAWEPSFQDSILNVRDEEVGILKKMAYYAGGIFTFTI  
APFLVTLVSFAVYVLIDENNVLDPQTAFVSLALFNIMRFPLGMFPMVTFSMQAWSIKR  
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TGKSSLISALLGEMEKISGHVNTDGSIAVPPQQAWIQNATLRDNILFGKAFDQRKYDNVI  
ECCALRPDLEMLPGGDSTEIGEKGINLSSGQKQRVALARAVYADAEVYLFFDPLSAVDAH  
VGKHI FEKVI GPGSMLVGKSRLLVTHGISFLPFVENILVLKDGEISESGTYQELIDQKGA  
FAEFLSQHIQELDDEEISLIQETLNDGVNNVIQRALSVRSNRNSNGSDGSTRKKPISR  
QVSKQSVHSKTVTTVPGRANLIGVEESATGAVTWLVYKKYIQSIGFKFGFGSVLFTAINQ  
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ESHNKLLLESCLRMPMSFFDTTPLGRIINRFSKDVDVVDNVLPVTIRAWLLFLFNVFGVFI  
VIGTSTPIFLAVVPLMVIYYFVQRFYIDTSRQLKLESVTRSPIYSHFGESIGGQSTIR  
AYGQQDRFTQESERRVDYNQLVSYPTIVANRWLAVRLELIGSCVILFAALFAILARDTIG  
QATVGVSISYALQISHYLSFLVRMTSEVETNIVAVERLEEYTVLPREAEWQKGTVDKA  
VEGKVEFKDYQIRYREGDLVIRGISLNVRGGEKIGIVGRTGAGKSSLTLGLFRIVEAAG  
GQIIDGLDISKMGHLQRLRGLTIIIPQDPVLFSGTLRANVDPFKSYSDDQVWKALEL  
KTFVKGLSAGLDHEIAENGENLSVGQRQLICLARAVRKTKVLILDEATAAVDLETDDLI  
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SEQ ID NOS (gMRP1d)

>CDS undefined product 10739643:10744643 forward MW:169160  
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FMRKYGVRTSGTMFMFWFLRMFFGIIQLRTEVMENDKRPNAGSGDTVDFWEYQYVSYIL  
QYSLICLMLVLELPDKEPTFSYYPKSKNPNELKSSFFAKLLFLYFDTFAWKGFRKPLT  
MEEMYDINPQDTSRELVPPFDKYWDMSVANGRKQIAADKKAGKTNIEYKPHSETNGSSL  
YAMVRAYGAPFWFAGMLQLAISGLQFASPYLMQEMMAVIALDGPVWKGLLLTFALFAASL  
LLALLNGQYYNTFLSGFRIRTGLVSAIYRKALRISSAAKKDTTVGEIVNLMAVDAQRFF  
ELTSYMHILWSGVLIIALCVILYDILGAAVFAGLGMILITPVSGVIATKMRDAQVAQM  
KIKDDRVKKMNEILGGIKVLKLYAWEPSFQDNILTVEEIGILKRMAYYAGIYFTFTI  
APFLVTLVSVFAYVVLMDENILDPTAFVSLALFNLRFPLGMLPMMVTFSMQAWVSVKR  
IDKFLNSAELDPSNVSNKSDDEALTIDGTFSWGDETPTLNINLSLRKGQLSAIVGTVG  
TGKSSLISALLGEMEKISGHVNTDGSIAVVPQQAWIQNATLRDNILFGKAFDQRKYDNVI  
ECCALRPDLEMLPGGDSTEIGEKGINLSGGQKQRVALARAVYADAEVYLFDPLSAVDAH  
VGKHIKEVKVIGPSGMLVGKSRLVTHGISYLPFVENIFVVKDGIESESGSYQQLLDQKGA  
FAEFLTQHQELDEADEDEIKLIQETLKDETAQRIVERSLSVRSGRSGGSNSSIRKKRIS  
RQESKASAKKEDPIIQNLDKATLIEKEESATGAVTWAVYKKYVTAIGFQFGFWVVFSAI  
NQGSGIYSSMWLTDWSEDPEAITDTSVRDMDYLGVY GALGGVQSIALFIGSVLLALGCLKA  
AEESHNKLLLESSMHMPMSFFDTTPLGRIINRFSKDVDVVDNILPATIRAWLLMLFSVIGV  
FVVIGISTPIFLAIVPPLMIYYFVQRFYIETSRQLKRLESVRSPIYSHGESIGGQST  
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KNAGIVS

AAB46616. multidrug resista...[gi:1835659] BLink, Domains, Links

LOCUS AAB46616 1531 aa linear PRI 10-FEB-1997

DEFINITION multidrug resistance-associated protein [Homo sapiens].

ACCESSION AAB46616

VERSION AAB46616.1 GI:1835659

DBSOURCE locus HUMMRPX accession L05628.1

KEYWORDS

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 1531)

AUTHORS Cole,S.P., Bhardwaj,G., Gerlach,J.H., Mackie,J.E., Grant,C.E.,  
Almquist,K.C., Stewart,A.J., Kurz,E.U., Duncan,A.M. and Deeley,R.G.TITLE Overexpression of a transporter gene in a multidrug-resistant human  
lung cancer cell line

JOURNAL Science 258 (5088), 1650-1654 (1992)

MEDLINE 93088080

PUBMED 1360704

REFERENCE 2 (residues 1 to 1531)

AUTHORS Stride,B.D., Valdimarsson,G., Gerlach,J.H., Wilson,G.M., Cole,S.P.  
and Deeley,R.G.TITLE Structure and expression of the messenger RNA encoding the murine  
multidrug resistance protein, an ATP-binding cassette transporter

JOURNAL Mol. Pharmacol. 49 (6), 962-971 (1996)

MEDLINE 96251691

PUBMED 8649356

REFERENCE 3 (residues 1 to 1531)

AUTHORS Gerlach,J.H.

TITLE Direct Submission

JOURNAL Submitted (30-JAN-1997) Cancer Research Labs, Queen's University,  
Kingston, ON K7L 3N6, Canada

COMMENT On Feb 10, 1997 this sequence version replaced gi:292333.

FEATURES Location/Qualifiers

source 1..1531

/organism="Homo sapiens"

/db\_xref="taxon:9606"

Protein 1..1531

/product="multidrug resistance-associated protein"

CDS 1..1531

/gene="MRP"

/coded\_by="L05628.1:197..4792"

/note="putative"

ORIGIN

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 61 drgyiqmptl nkktalgfl lwivcwadlf ysfwersrgi flapvflvsp tllgitlla  
 121 tfliqlerrk gvqssgimlt fwvalvcal ailsksimta lkedaqvdlf rdifvyvf  
 181 lliqlqlsc fsdrsplfse tihdpnpcpe ssasflsrit fwwitglivr gyrqplegsd  
 241 lwslnkedts eqvvpvlvkn wkkecaktrk qpkvvyssk dpaqpkessk vdaneeveal  
 301 ivkspqkewn pslfkvlykt fgyflmsff fkaihdimmf sgpqilklli kfvdntkapd  
 361 wqgyfytvll fvtacqltv lhqyfhicfv sgmriktavi gavyrkalvi tnsarksstv  
 421 geivnlmsvd aqrfmndlatty inmiwsaplq vilallylw1 nlgpsvlagv avmvlmvpvn  
 481 avmamktktv qvahmkskdn riklmneiln gikvlklyaw elafkdkvla irqeelkvk  
 541 ksaylsavgt ftwvctpflv alctfavyvt idennildaq tafvslalfn ilrfplnlp  
 601 mvissivqas vslkr1rlrifl shelepdsl errpvkdggs tnsitvrnat ftwarsdppt  
 661 lngitfsipe galvavvgqv gcgkssllsa llaemdkveg hvaikgsvay vpqqawiqd  
 721 srenilfgc qleepyyrs v iacallpd1 elpsgdrte igeckgvnlsg gqkqrsvlar  
 781 avysnadiyl fddplsavda hvgkhifenv igpkgmlknk trilvthsm s ylpqvvdvii  
 841 msggkisemg syqellardg afaeflryta steqeqdaee ngvtgvsgpg keakqmengm

901 lvtdsagkql qrqlssssy sgdisrhns taelqkaeak keetwklmea dkaqtgqvkl  
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1321 ekvgivgrtg agksslgl frinesaege iidginiak iglhdlrfki tiipqdplf  
1381 sgslrmnldp fsqysdeevw tslelahlk1 fvsalpd1k1 hecaegg1n1 svqqrqlvcl  
1441 arallrk1ki l1deataav dletddliqs tirtqfedct vltiahr1nt imdytrv1v1  
1501 dkgeiqeyga psd1lqqrg1 fysmakdag1 v

//

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SEQ ID NO 7-15 (variants exons 4 and 8 DmMRP).doc  
SEQUENCES OF *D. melanogaster* IN FIGURE 4

*Drosophila melanogaster* Exon 4 variants (amino acids encoded by exons 4a and 4b)

exon 4a VSLVTFATYVLTSEANQLSVEKVLVSIALFDLMKPLTILPMLSDIAE

exon 4b VSLVTFATYVLIDENNVL DATKTFVSLSLFNILRFPLTMLPMLITNLVQ

*Drosophila melanogaster* Exon 8 variants (amino acids encoded by exons 8a to 8g) :

exon 8a

ATNFFSSLAISLGCLKCSQLLHQTLLYYNLRWPMELFDTTPLGRIVNRFSKDIDTIDNVLPFNIRVVIGQAYM

exon 8b

VTGYLSTLILSLGCVYSARYMHNVLLHGTLRWPME MFDTPLGRIVNRFSKDVTIDNTLPLNLRVVILQLFA

exon 8c

TSYFFCSLTLALGCIPCSKVLHETLLSYVFRWPMELFDTTPLGRVVNRFSKDVTIDNVLPMLWRMVISQAF  
A

exon 8d

LSKYLSGLALAIGGLHCSMN VFNKLLNTGLKWPME LFDTTPLGRILSRYSKDVDTVDSLPAITVQLLNTC  
FG

exon 8e

VLAYFAVVIVYLGGFQAAKTIHNELLAVIIRGSVCRFFDITPIGRLLNSFSGDMDVVDEELPATMDSFMTFIM  
M

exon 8f

LCNYGAAISLFTATLHASSRVFHRLFNNIMHCPSEFFDTTPKGRILDRCSSDVNCLDLVMPNIRVMVMSTAF  
Q

exon 8g

FTSFFSDLAPALGSLHAAKVLHSMLLENVLRAPMTMFDTTPVGRILS RFSKDVESVDQKMPQVINDCIWCA  
FE

DmMRP4a8a

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NVT FENPHGEKNGRKKG MASIM PPIYKSF GGVL F G ALM KLF TDT LTFA QPQVLSL IISF  
VEA QDAEPEWKG ILYAVLLFVL AAAQTFLGQYFHRMFIVGLRIR TALINAIYRK ALRIS  
NSTKKE STVGEIVNLMAVDAQRFMELTT YLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
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LARAVYSDADLYL LDDPLSAVD A HVGK HIFE E VIGPKG I LARKS RVLV THGVTFLPQVDS  
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GTVEKA IKLARTE S L D SIS VTSADSLMGGGSLR RRTKRQD SHDSV AASLKKKQEV E  
GKLIETEK SQTGGV E FAVYKHYIKS V G IFLS V ATLV LNFV FQAFQIGSNLWLTQWANDQN  
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L YYFAQRFYVATSRQLMRLES VSRSP IYSHFSETVTGASTI RAYNVGDRFIEESDAKVDK  
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VEAQDAEPEWKGILYAVLLFVLAQQTFLGQYFHRMFIVGLRIRTLINALIYRKALRIS  
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>CDS undefined product 8660:30368 forward MW:172704  
MADDTSSPMDRFCGSTFWNATEWTYNDPDTFCFEQTALVWTPCAFYWAFVIFDFYYLK  
ASLDRNIWPWNKLNVS KALVNLGLL VITALD LIMALVKKGGDSEL PLYDLDVWGP I IKFAT  
FLLLFIPIPLNRKYGVQTTGCQFIFWFLTVLSI PRCRTEVRLDAERQKILNSQQPSEQD  
FSWEEYQFVSSFFIFTFTSIMLILNCFADGMPRQTKYQRGENE IPELSASFLSRITYQWF  
DKMALKGYRNPLEEKDLWDLRPQDSCSEVMP IFAHHNQNVRKNYKNKARVEPKAQFSNG  
NVTFENPHGEKNGRKKGMA SIMPPIYKSFGGVFLFGALMKLFTDTLTFAQPQVLSLIISF  
VEAQDAEPEWKGILYAVLLFVLA AATQFILGQYFHRMFIVGLRIRTLINALIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMI I IIPVNGVIASRIKYQIRQMKYKDERVKLMNEVLSGIKVLKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVL DATKTFVSLSLFNI  
LRFPLTMLPMLITNLVQTQVSNRINKFLNSEELDPNSVLHDSSKPHPM SIEENGESFWGD  
EITLRNINIEVKKGSLVALVGTVGSGKSSVQAFLGE MEKLAGVVNTVGK LAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
LARAVYSDADLYL LDDPLSAVD A HVGKHI FEEVIGPKGILARKSRV LVT HGVTFLPQVDS  
IYVIKMGEISESGTFDQLVKNKGA FADFI IQHLQEGN EEEELNQIKRQISSTADVPELL  
GTVEKAIKLARTESLSDSISVTSADSLMGGGSLRRRTKRQDSHDSVASAASLKKKQEV  
GKLIETEK SQTGGVEF A VYKHYIKSVGIFLSVATL VN FVQAFQIGSNLWLTQWANDQN  
VANDTGLRDMLGVYGA FGFGQVATNFFSLAISLGCLKCSQLLHQ TL LYYNLRWPMELF  
DTTPLGRI VNRFSKIDTIDNVL PFNIRV VIGQAYMV L A TIVVISLSTPIFLAVIVPIAF  
L YYFAQRFYVATSRQLMRLES VSRSPYSHFSETVTGASTIRAYNVGDRFIEESDAKVDK  
NQVCKYPSVIANRWLAIRLEMVG NLI IILFASLFAVLGGQTNPGLVGLSVSYALQVTQTLN  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNKPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTLALFRIIEAAGGRISIDGVDIASMGLH  
MLRSRLTIIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKS FVKS LAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKT KVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT  
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>CDS undefined product 8660:30368 forward MW:172643  
MADDTSSPMDRFCGSTFWNATEWTNDPDTFCFEQTALVWTPCAFYWAFVIFDFYYLK  
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FLLLFIPIPLNRKYGVQTTGCQFIFWFLLTVL SIPRCRTEVRDLAERQKILNSQQPSEQD  
FSWEEYQFVSSFFIFTFTSIMLILNCFADGMPRQTKYQRGENEIPELSASFSLSRITYQWF  
DKMALKGYRNPLEEKDLWDLRPQDSCSEVMPIFAHHWNQNVRKNKARVEPKAQFSNG  
NVTFENPHGEKNGRKKGMASIMPPYKSFGGVFLFGALMKLFTDTLTFAQPQVLSLIISF  
VEAQDAEPEWKGILYAVLLFVLA AATQFTILGQYFHRMFIVGLRIRTLINAIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMIILIPVNGVIASRIKTYQIRQMKYKDERVKLMNEVLSGIKVLKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVL DATKTFVSLSLFNI  
LRFPLTMLPMLITNLVQTQSVNRINKFLNSEELDPNSVLHDSSKPHPM SIEENGESFWGD  
EITLRNINIEVKKGSLVALVGTVGSGKSSVQAFQFLGEMEKLAGVVNTVGKLAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
LARAVYSDADLYL LDDPLSAVDAHVGKHI FEEVIGPKGILARKSRV LVTGVTFLPQVDS  
IYVIKMGEISESGTFDQLVKNKGAFADFIIQHLQEGN EEEELNQIKRQISSTADVPELL  
GTVEKAIKLARTESLSDSISVTSADSLMGGGSLRRRTKRQDSHDSVASAASLKKKQEVE  
GKLIETEKSQTGGVEFAVYKHYIKSVGIFLSVATLVLNFVFOAQFQIGSNLWLTQWANDQN  
VANDTGLRDMYLGVYGA FGFGQVVTGYLSTLILSLGCVYSARYMHNVLLHGT LRWPMEMF  
DITPLGRI VNRFSKDVTIDNTLPLNLRV VILQLFAV L A TIVVISLSTPIFLAVIVPIAF  
LYYFAQRFYVATSRQLMRLESVRSRPIYSHFSETVTGASTIRAYNVGDRFIEESDAKVDK  
NQVCKYPSVIANRWLAIRLEMVG NLIILFASLFAVLGGQTNPGLVGLSVSYALQVTQTLN  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNKPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTLALFRIIEAAGGRISIDGVDIASMGLH  
MLRSRLTIIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKS FVKS LAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKT KVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT  
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>CDS undefined product 8660:30368 forward MW:172762  
MADDTSSPMDRFCGSTFWNATEWTYNDPFTPCFEQTALVWTPCAFYWAFVIFDFYYLK  
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FLLL FIFIPLNRKYGVQTTGCQFIFWFLTVLSIPRCRTEVR LDAERQKILNSQQPSEQD  
FSWE EYQFV SFFIFTFTSIMLILNCFADGMPRQTKYQRGENEIP ELSASFLSRITYQWF  
DKMALKG YRNPLEE KDLWDLRPQDSCSEVMP IFAH HWNQNVRKNKARVEPKA QFSNG  
NVT FENPHGEKNGRKKG MASI MPP IYKSF GGVFLFG ALM KLT DLT FAQPQVLSLII SF  
VEAQDAEPEWKGILYAVLLFV LAA AQT F I L G Q Y F H R M F I V G L R I R T A L I N A I Y R K A L R I S  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMI I LIPVNGVIASRIKTYQIRQMKYKDERV KLMNEVLSGIKV LKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVL DATKTFVSLSLFNI  
LRFPLTMLPMLITNLVQTQVSNRINKFLNSEELDPNSVLHDSSKPHPM SIE NGE FSWGD  
EITLRNINIEVKKGSLVALVGTVGSGKSSVQAFQFLGEMEKL AGVVNTVGK LAYVPQQAWI  
QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKG I NLSGGQKQRIS  
LARAVYSDADLYL LDDPLSAVDAHVGKHI FEEVIGPKG I LARKS RVLVTHGVTFLPQVDS  
IYVIKMGEI SE SGT FDQLVKNKGAFADFIIQH LQEGN EEEELNQIKRQI S STADVPELL  
GTVEKAIKLARTE S L D S I S V T S A D S L M G G G S L R R R T K R Q D S H D S V A S A A S L K K K Q E V E  
GKLIETEK SQTGGV E F A V Y K H Y I K S V G I F L S V A T L V L N F V F Q A F Q I G S N L W L T Q W A N D Q N  
VANDTGLRDMYLG VYGA FGFGQVTSYFFCSLT L A L G C I F C S K V L H E T L L S Y V F R W P M E L F  
DTTPLGRVVNRFSKD VDTIDNVLPMIWRM V I S Q A F A V L A T I V V I S L S T P I F L A V I V P I A F  
L YYFAQRFYVATSRQLMRLES VSRSP I YSHFSETVTGASTI RAYNVGDRFIEESDAKVDK  
NQVCKYPSVIANR WL A I R L E M V G N L I I L F A S L F A V L G G Q T N P G L V G L S V S Y A L Q V T Q T L N  
WLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNKPKNWPQEGRVEFQNFQVRYRE  
GLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTLA LFRIIEAAGGRISIDGVDIASMGLH  
MLRSRLTTIIPQDPVLFSGSLRINLDPFEIKTDDEIWKALELSHLKS FVKS LAAGLNHEIA  
EGGENLSVGQRQLVCLARALLRKT KVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT  
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>CDS undefined product 8660:30368 forward MW:172502  
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FLLLFIPIPLNRKYGVQTTGCQFIFWFLLTVLSIPRCRTEVRLDAERQKILNSQQPSEQD  
FSWEELYQFVSSFFIFTFTSIMLILNCFADGMPRQTKYQRGENEIPELSASFLSRITYQWF  
DKMALKGYRNPLEEKDLWDLRPQDSCSEVMPIFAHHNQNVRKNKARVEPKAQFSNG  
NVTFENPHGEKNGRKGMASIMMPIYKSFGGVFLFGALMKLFTDTLTFAQPVLSLIISF  
VEAQDAEPEWKGILYAVLLFVLAQAAQTFILGQYFHRMFIVGLRIRTLINALIYRKALRIS  
NSTKKESTVGEIVNLMAVDAQRFMELTTYLNMIWSAPLQIGLALYFLWQQLGPSVLAGLA  
VMIILIPVNGVIASRIKYQIRQMKYKDERVKLMNEVLSGIKVLKLYAWEPSFEKQVLDI  
RDKEIATLRSTAYLNAGTSFLWSCAPFLVSLVTFATYVLIDENNVLADATKTFVSLSLFNI  
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QNATVRDNILFGQTYDRKRYNKVIDACALRADIDILSAGDLTEIGEKGINLSGGQKQRIS  
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GKLIETEKSQTGGVEFAVYKHYIKSVGIFLSVATLVLNFVFQAFQIGSNLWLTQWANDQN  
VANDTGLRDMDYLGVYGAFFGFGQGVAYFAVVIVYLLGGFQAAKTIHNELLAVIIRGSVCRF  
FDITPIGRLLNSFSGDMDVVDDEELPATMDSFMTFIFMVLATIVVISLSTPIFLAVIVPIA  
FLYYFAQRFYVATSRQLMRLESVRSRSPYSHFSETVTGASTIRAYNVGDRFIEESDAKVD  
KNQVCKYPVIANRWLAIRLEMGVLNIIIFASLFAVLLGGQTNPLVGLSVSYALQVTQTL  
NWLVRMSSDIETNIVSVERIKEYGETKQEAPWELEQDKNPKPNWPQEGRVEFQNFQVRYR  
EGLDLVLRGVSFNIQGGEKVGIVGRTGAGKSSLTLALFRIIEAAGGRISIDGVDIASMGL  
HMLRSRLTIIIPQDPVLFSGSLRINLDPFEIKTDEIWKALELSHLKSFVKS LAAGLNHEI  
AEGGENLSVGQRQLVCLARALLRKT KVLVLDEATAAVDLETDDLIQKTIRTEFKECTVLT  
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>CDS undefined product 8660:30368 forward MW:172504  
MADDTSSPMDRFCGTFWNATETWYTNDPDTFCFEQTALVWTPCAFYWAFVIFDFYFLK  
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FLLL FIFIPLNRKYGVQTTGCQFIFWFLLTVLSIPRCRTEVRLDAERQKILNSQQPSEQD  
FSWE EYQFV SFFI FFTFTS IMLILNCFADGMPROTKYQRGENEIPELSAFSLSRITYQWF  
DKM ALKG YRN PLEEKDLWDLR P QDSCSEVMP IF AHHWNQNVRK NYKNKARVEPKA QF SNG  
NVT FENPHGEKNGRKKG MASIM PPI YK SF GG VFL F G A L M K L F T D L T F A Q P Q V L S L I I S F  
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E I T L R N I N I E V K K G S L V A L V G T V G S G K S S V V Q A F L G E M E K L A G V V N T V G K L A Y V P Q Q A W I  
Q N A T V R D N I L F G Q T Y D R K R Y N K V I D A C A L R A D I D I L S A G D L T E I G E K G I N L S G G Q K Q R I S  
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E G G E N L S V G Q R Q L V C L A R A L L R K T K V L V L D E A A V D L E T D D L I Q K T I R T E F K E C T V L T I  
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>CDS undefined product 8660:30396 forward MW:173533  
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FLLTVLSIPRCRTEVR  
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EYQFV  
SFFIFTFTS  
IMLILNC  
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